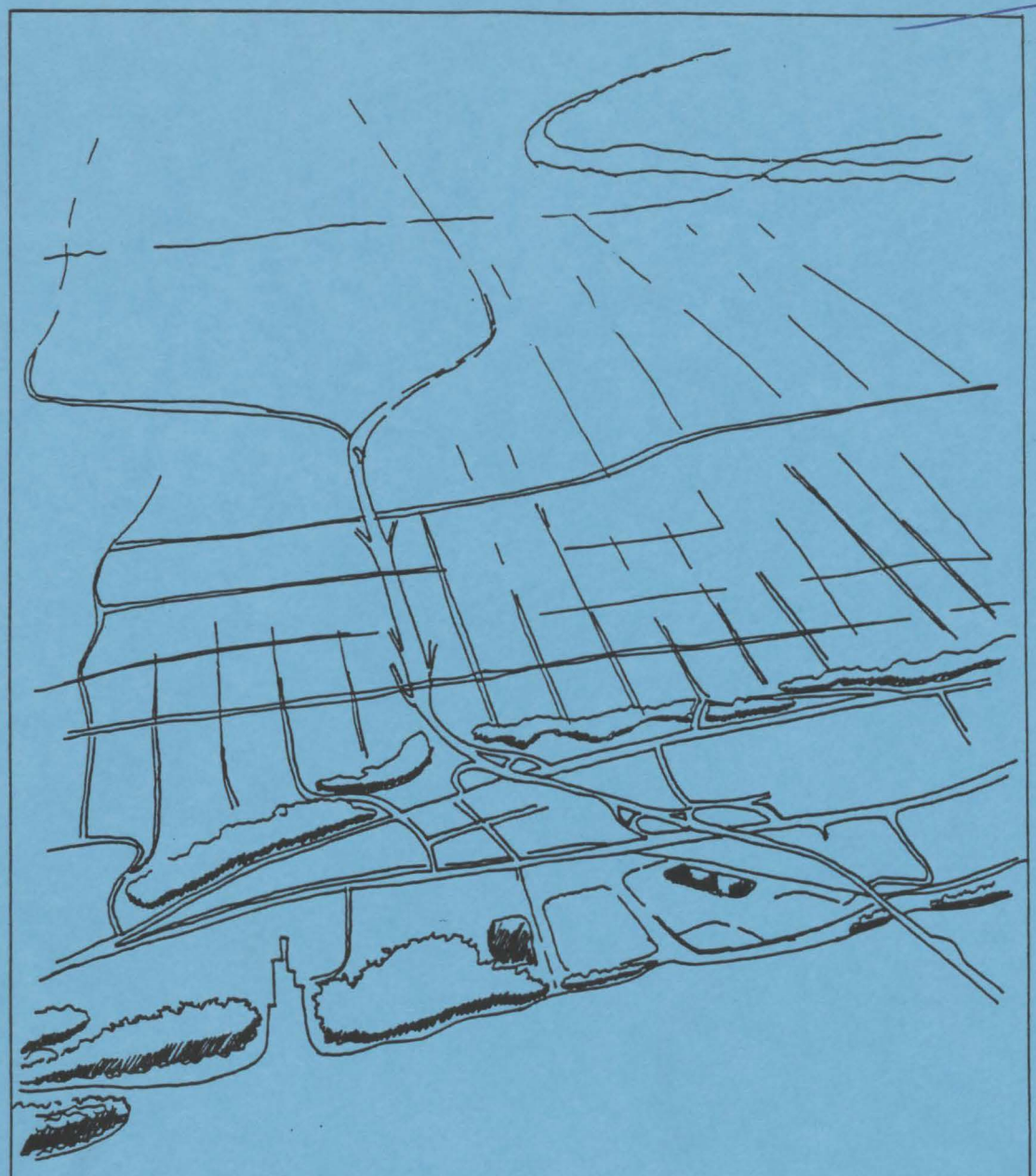

South St. Paul Riverfront Park

PACKER TERMINAL WETLAND & MISSISSIPPI RIVER EDGE

PARK DESIGN PROJECT

prepared by the
University of Minnesota
Center for Community Studies and Landscape Architecture Department
for the South St. Paul River Environmental Action Team (REAP)
1989

INTRODUCTION

In fall 1988, the South St. Paul River Environmental Action Team (REAP) contacted the Center for Community Studies (CCS) at the University of Minnesota requesting student assistance in generating design ideas for park and trail development along the Mississippi River corridor. Two student projects were subsequently undertaken - one a class project in Winter 1989 and the other an individual student thesis project in Spring 1989. The results of the thesis project have been compiled into a report available for review. This presentation will focus on the work of the class.

The class, under the direction of Professors Joan Nassauer and Peter Olin, consisted of 18 students who are primarily juniors in the Bachelor of Landscape Architecture degree program or graduate students pursuing a Masters of Landscape Architecture. The class is a design studio whose intent is to explore the role of ecological systems in the landscape and how people and nature interact. In this context ecological systems are viewed in the broadest sense, being concerned with the interactions and interdependencies of geology and soil, hydrological systems of surface and underground water, animal and plant communities, as well as their interface with human systems of transportation, land use, and culture.

Earlier in the quarter the students had developed skills in analyzing topography, soils, and vegetation using Kaposia Park in South St. Paul as their study site. This exercise gave students an initial introduction to the community and to the character of its bluffs and ravines. (Thus references are made to Kaposia Park in their subsequent riverfront studies.)

The work discussed here represents the final four week project of the quarter. The site is tract of about 20 acres dominated by wetlands and floodplain forest adjoining the Mississippi River immediately north of the Packer Terminal barge slip and south of the former city sewer works and I-494. The site was given to the City of South St. Paul and now is planned for park development. The site is labeled here the Packer Terminal Wetland site and students have given it different names reflecting their design ideas.

The assignment given to the students was to analyze the site and prepare a conceptual master plan for a park which provides places for human activity and which interprets and makes apparent on the site an ecological system important to the area. Some students focused on the role of the river as a hydrological force or the importance of plant or animal communities, while others looked more directly at the strong impact people have had on the site. The varied approaches to the project reflect the many messages the site now conveys to its visitors - the power of the river, the majesty of the eagles, remnants of the site's history as a dumping place, and so forth.

The work of the students is organized into four broad groups - river systems, plant communities, wildlife habitat, and cultural systems. For each student, the analysis board, the master plan, and the illustrative sketches are discussed in this order. (In parentheses are numbers cooresponding to the slides of each student's work.) Since so many of the elements on the analysis drawings are repeated, only those which show new insights or ones critical to that design are noted here.

LANDSCAPE ARCHITECTURE DESIGN STUDIO

RIVER SYSTEMS

WOODLAND CORRIDOR - David Bachman

ANALYSIS (1 & 2)
The large scale context drawing depicts the river valley with the vehicular and industrial corridors at the base of the bluff and the other transportation and wildlife corridors along the river. Also recognized is the importance of the site as an upstream remnant of wooded floodplain islands. The site analysis identifies the varying vegetative communities on the site including willow along the river, silver maple near the entry, and a central overstory of cottonwood.

MASTER PLAN (3)
This design is inspired by the systems of corridors surrounding the site. The project focuses on re-establishing the corridor systems of the wetlands, vegetation, wildlife, and river and on integrating human movement systems into the existing wetland system. Bands of vegetation and open spaces parallel the river accentuating the different types of woodland communities. Cutting across these bands are trails looping through the site and a waterway that connects interior wetlands to the river.

ILLUSTRATIVES (4)
Perspective drawings show views through wooded spaces and along paths.

FLOODPLAIN - Mark Webster

ANALYSIS (5)
The analysis brings out what landforms exist on the site - low ridges which separate the interior wetland areas from the river edge.

MASTER PLAN (no slide available)
This design expresses the rhythm and repetition of the flood cycle of the Mississippi River as well as the effects of flooding on the Packer Terminal wetland site. The trail moves through the spaces created naturally by the act of flooding and designed spaced that illustrate various aspects of flooding.

ILLUSTRATIVES (6)
Included along the trail are poles which will show annual water levels of the river in flood.

MISSISSIPPI RIVER WALKWAY - Eric Johnson

ANALYSIS (7)
The site's mosaic of vegetation and the views from the site are shown.

MASTER PLAN (8)
The location of the park site on the floodplain of the Mississippi River is emphasized by creation of a small ravine or trench crossing the site inwhich visitors will be able to clearly see the nature of a river and the impact of flooding. The design proposes that a meandering trench be cut through the site beginning and ending in a pond-like excavation. The shoreline of the park will be graded so that water overflowing from the Mississippi River in flood will flow into the trench. As this occurs, the river will be creating a river. During the season when the river is not flooding, the trench should be dry enough to accomodate hiking, bike riding, or leisurely strolls.

ILLUSTRATIVES (9)
The small ravine created by the trench is shown both with walkways running along above it and down along its route. The sides of the trench will be heavily planted to provide a colorful setting. Bridges crossing the trench and a boardwalk over the marsh are also shown.

FRAMING THE FLOODPLAIN - Joella Raynes

ANALYSIS (10)
This analysis shows key viewing points from the site as well as the importance of the existing vegetation in creating warm sheltered areas.

MASTER PLAN (11)
This design is intended to force people to look at the floodplain and its environment by creating large picture frames at significant locations. The site is entered through an allee of trees on the levee along which a gap is created through which the wind would move. A flexible plastic frame with a wind speed gauge would help people notice the wind. Another frame looks down only at the water, while a third looks up at the bridge.

A trail system generally leads people through the site, but periodic gaps in the trail encourage the visitor to make their own way. From the entry the trail moves through a dense sheltering woods and then into a partial clearing. Through a parklike space a new water feature meanders. Water from the river appears to flow into the site, carving broad bends as it meanders toward a pond. On one side of the clearing a frame directs the view to the river, while a frame on the opposite side directs the view to the surrounding woodland. A sand bar and sculptural tree provide reference to the Mississippi River and the miniature river encourages human contact that would not be feasible with the Mississippi and its barge traffic and strong current. The walk ends in the same place it began, once again looking at the framed river.

ILLUSTRATIVES (12)
The drawings illustrate the path and water ways and the framed views featured in the plan.

THE RIVER'S FORCE - Mark Sauer

ANALYSIS (13)
Of significance to this design was the observation of existing pieces of debris left by floodwaters along the shore.

MASTER PLAN (14)
This design focuses on the power of water existing in a river. The main element of the design is a newly created river channel which enters the park near the north of the site and exits near the south end. The island created by this loop will be undergoing change from the erosion of the river. The effect of this erosion is visible in the undercut banks and the long, jutting sandbar at the island's south end. Also accentuated in the design is the visual suggestion that the existing wetlands were once formed by an ancient river oxbow.

ILLUSTRATIVES (15 & 16)
One drawing expresses the flowing line of vegetation as it sweeps around the new river channel bend, while another suggests a representation of river deposited debris. The evolution in the landform of the island over the years is marked by a line of color-banded posts cutting through the island lengthwise; their colors being revealed through river erosion and being covered downstream by new riverborn deposits.

PLANT COMMUNITES

RIPARIAN MEMORIAL PARK - Fred Rozumalski

ANALYSIS (17)
This park design is based on the ecological factor of native vegetation and the encroachment of exotic plant species. The main features dramatized are, first, to point to the seriousness of the problem of introduced plant species and, second, to emphasize the unique characteristics, form, and feelings of this native riverine vegetation. The site analysis indicates lythrum (purple loosestrife) along the river and other exotics (such as buckthorn) scattered in the woodland.

MASTER PLAN (18)
The design features a barge washed upon the river shore which carries exotic species and spills them onto the land. Trails through the site expose visitors to the major native vegetative communites of the riparian cottonwood grove, the silver maple forest, and marsh. Signs placed throughout the park describe the affects of these exotic species and also explain the characteristics of the native vegetation. The existing high tree canopy and the distinct lack of understory of the riverine forest creates an ideal setting for a park experience.

ILLUSTRATIVES (19)
The threat to native species is shown via a barge spilling exotic plants onto the shore. The grandeur of the existing overstory is accentuated with ribbons hung in the trees emphasizing the elegant cathedral form of the vegetation in the forest.

TWO VIEWS OF NATURE - Eric Peters

ANALYSIS (20)
Notable for this design were observations of the strongly contrasting character between different types of vegetation on the site, the prevalence of vines, and the importance of views along the river.

MASTER PLAN (21)
This design reflects the two sides of man's relation to nature: the landscape as untamed, sublime, and unexpected vs.the landscape as ordered, picturesque, and refined. The design has three parts. The first part reflects the threatening part of nature through a winding trail in dark, dense woods. The trail passes bogs and areas where metal cylinders are hung from trees creating eerie sounds. The second part of the site reflects man's growing relation with nature. Here a boardwalk crosses over a marsh and around a pond. The final part reflects man's confidence in nature which is represented through the use of allee's and fountains. One allee moves up a ramp terminating with a direct view of the refinery. The other allee penetrates the cottonwood forest revealing it as a wildlife sanctuary, yet that path terminates at a changed river inlet and a fountain. Arcing around the inlet is a vine covered arbor which contrasts the controlled management of vines here with their wild abandonment in the woods. The entrance and exit of the site is an allee that reflects the theme of the design - one side has an ordered placement of trees and the other side has random trees.

ILLUSTRATIVES (22)
The drawings show the varying relation between paths and vegetation, be it wooded and tree-lined, over the marsh on a boardwalk, or dominated by vines.

THE RIVER AS REFUGE - Eric Olund

ANALYSIS (23)
This project acknowledges the role existing cottonwoods and silver maple play in creating shelter and giving the site its character. The importance of the wild area across the river is also noted.

MASTER PLAN (24)
The ecological focus of this design is the river as a refuge for plant and animal species. But, as a park for human use, rather that making a wildlife preserve, the design aims to create spaces that have a feeling of refuge. The visitor enters the park through a constricted arborvitae-lined corridor which gives a feeling of tight enclosure similar to the feeling of the stockades at the Armour plant. Also, the stelae (columns) that interrupt the path are made of stone with fossils of animals that remind a person of the slaughterhouse. The walk bursts through a limestone wall that separates the park from the outside and into a vast room of cottonwoods and maples cleared of underbrush (called the mosque). The walk continues through a wetland mostly surrounded by trees. It then re-enters the woods under the arching riparian forest (called the cathedral). The axis crosses an accentuated water basin that illustrates the flood cycle - the primary cause of the river as refuge. Then it goes through a sculpture garden (vine land) and into a bowl-shaped landform that embraces the river.

ILLUSTRATIVES (25)
Shown are how the abstract forms of the site features are both art and the inspiration for art in the landscape.

WILDLIFE HABITAT

FLIGHT THROUGH KAPOSIA'S WETLAND - David Larson

ANALYSIS (26)
This analysis recognizes the existing patterns of woodland and marsh and their importance to birds.

MASTER PLAN (27)
The objective of this plan is to create a space that would function as an interpretive area for viewing different bird species and their habitat. The trails are designed to work as three individual pathways or as a longer loop system moving around the site's perimeter with a shorter loop cutting though the site from east to west. Each individual trail focuses on the habitat and species typical to the environment (Meadow-Marsh Trail, Woodland Trail, and River Trail). The elevated pathway is designed to enhance the user's sense of bird behavior in the specific spaces with the most dramatic being the observation towers that suggest the raptors of the area.

ILLUSTRATIVES (28)
Boardwalks and observation decks are shown leading down to the water's edge, up to the eagle's level, and through decaying tree habitats.

BIRD HABITATS - Susan Maag

ANALYSIS (29)
Here are noted the eagle nesting sites in the area.

MASTER PLAN (30)
The goal of this design is to accentuate the presence of birds and their habitats. Rolling meadows greet the visitor upon entering the site. Head tall grasses and undulating earth berms give the viewer an idea of foraging patterns. The paths lead to an overlook for watching eagles and water fowl along the Mississippi. The overlook suggests a ledge or nesting spot which holds the viewer in safely. Leaving the meadow, a visitor will walk along the edge of the woods into another created meadowland. A tower is located at tree height for allowing views of birds into the treetops and sky. Arbors located around the perimeter maximize viewing by camouflaging one from the nesting areas. This area leads through dense existing woodlands and then opens out into an expanded swamp where nesting can be observed. Sculptural flags are located in the water to represent bird flight even when birds are absent. Beach areas and sound sculptures are located along the barge slips. The sound sculptures represent the sounds of water fowl lifting from the water. Paths lead on through the woods and then into another meadowland and arbor retreat. The arbor shelters the visitor while maximizing views of wildlife feeding and nesting. The final link approaches the Mississippi, flows along its edge, and then leads back to the rolling hills where eagle nesting sites are located. The high poles demonstrate the type of habitat which eagles frequent.

ILLUSTRATIVES (31)
The drawings show the undulating meadow, observation tower, bunker-like arbor, water edge arbor, and banner-flags simulating flight.

RIVERSIDE BIRD PARK - Tom Bisch

ANALYSIS (32)
Emphasis here is placed on the role of the Mississippi valley as a migratory bird corridor, the role of the site as home for woodpeckers, warblers, and beavers, and the importance of small niches on the site be they warm sunny spots or nesting places.

MASTER PLAN (33)
The philosophy of this design is that inorder to improve bird habitat significant changes are warrented on this already highly disturbed site. The design aims to increase the bird habitat potential by preserving large areas of the central woodlands, but increasing the wetland habitat to the west and creating food plots on the eastern portion of the site. The wetland area features new waterfowl nesting islands and opportunites for viewing from floating boardwalks. At the core of the site a large scale nestlike area is proposed which could shelter human visitors while simultaneously offering birds yarn for their nest building. The food plots include fields of grain, corn, tall grasses, and fruit bearing trees and shrubs.

ILLUSTRATIVES (34 & 35)
The first set of illustrations depicts the nest area, marsh edge, and floating boardwalk, while the other set of drawings show the lookout tower and observation deck.

BEAVER CREEK - Greg Johnson

ANALYSIS (36)
The site revealed evidence of beavers in the southeastern part of the site.

MASTER PLAN (37)
More than any other animal, beavers change the landscape, creating spaces for their own use, and at the same time creating new habitat for many other animals. Time is also a factor, as ponds silt up and fill in, the beavers move on downstream; new areas become old areas; forests become ponds; ponds become marshes; marshes become meadows; and the forest eventually reclaims its own. Based on existing vegetation and water features, a series of spaces are planned representing the sequential evolution of a landscape impacted by beavers. The entrance is marked by a visitor's center and a path which moves downstream along the river. Upon reaching the southern end of the site, the visitor begins a trek north (upstream) along a created creek and backwards in time across the park's landscape. Encountered first is a dam and pond with an active beaver lodge. Beyond the remnant of the next dam is the marsh representing sedimentation over time of the beaver pond. In the next space the marsh has become a meadow, and finally upstream it has been reclaimed by woodland vegetation.

ILLUSTRATIVES (38)
The drawings illustrate views across the site and how geodesic domes could be used as abstract beaver lodges for the interpretive facilities

CULTURAL SYSTEMS

PADDLEWHEEL PARK - Paul Landwehr

MASTER PLAN (39)
The Paddlewheel Park theme results from an investigation of the history of St. Paul around the 1850's. St. Paul became a boomtown as a result of river paddlewheet traffic. South St. Paul owed much of its early growth to the availability of river transportation. The site offers potential as a theme park due to its proximity to the river. Also, the limitations of the side such as air traffic noise, visual clutter, and heavy adjoining industrial use adds to the idea that it has little potential as a "wildlife refuge" or "natural area". The park would use non-traditional materials such as massive kinetic sculptures and fountains. The park would have a Disneyworld feel so visitors can escape through fantasy the surrounding technical chaos. An interpretive path leads the visitor on a systematic exploration of the individual pieces of a paddlewheel boat, culminating in a fullsize paddlewheel boat docked at the river's edge.

ILLUSTRATIVES (40 & 41)
The first set of drawings show smokestack towers, a cargo play area, and a paddlewheel fountain, while the second set illustrates a bridge simulating the boats superstructure and finally the fullsize boat replica.

COMMERCE PARK - Doug Snyder

ANALYSIS (42)
The importance of the river for commercial navigation and the potential for interest in the Packer Terminal are noted.

MASTER PLAN (43)
The design intent behind Commerce Park is to show how the Mississippi River connects South St. Paul to the eastern two-thirds of the United States, and through river corridors to the world beyond. It celebrates the barge as the primary means of transportation of goods and services up and down the river. The walk through the park is both an attempt to have the park users experience the barge and how it navigates the river. Therefore the user's experience level changes through locks and dams, walk on the water to feel its motion and navigate pathways by means of buoys. The visitor is invited onto and into a barge, and to watch the barges at work, i.e. running the river, and loading and/or unloading at the terminal. This also serves to show the connection between the river and the land-based industries associated with them in South St. Paul. There is also a point along the river to show how barge traffic may damage and erode the river bank where the channel runs too near an unprotected shore.

ILLUSTRATIVES (44)
Drawings illustrate how the visitor learns about river commerce by entering a barge interpretive center, viewing the river, going through a pedestrian scale lock and dam, navigating the landscape using buoys, and discovering the river height with an inclined ramp.

VIDEO PARK - Bart Richardson

ANALYSIS (45)
This site analysis brings out the numerous types of evidence of the site's highly disturbed character - adjoining impondment areas, a culvert, clear cutting, the pipeline, old washing machines, dumpsites, plastics washed ashore, views of the refinery, and so on.

MASTER PLAN (46)
The design is an attempt to make the user self-conscious of the garbage and waste one generates during one's life. Real plastic garbage is proposed to create mounds for "scenic" overlooks, a gas pipeline would be unearthed, old washing machines are scattered about the site, and the pond would be intentionally polluted with fertilizer and acid. To reinforce one's self-consciousness about garbage video cameras would be placed throughout the park so one could see oneself actually generating garbage. The park hopes to show the user that no matter how careful one is about waste, it cannot be escaped in the 20th century.

ILLUSTRATIVES (47)
Sketches highlight interpretive features to be introduced on the site - a washer sculpture garden, the unearthed pipeline, video screens, and viewing mountain of waste.

RIVER PARK - Jon Stefansson

ANALYSIS (48)
Existing site impacts such as the pipeline and views to the St. Paul Park refinery and to industry adjoining the site on the west are emphasized.

MASTER PLAN (49)
This design aims to contrast the destructive capacity of industrial use of the landscape with the serenity and strength of the river and woodland plant community. Upon entering the site, the visitor arrives at a circular portal room inwhich each person must chose the route to take. Not unlike life, the route chosen does not always lead to the expected end. To the west, the path enters the woods only to come upon the industrial west edge of the site. Here impacts of land exploitation are accentuated by denuded eroding hills and a pond allowed to be fowled by industrial runoff. Moving back to the east, the site is more green and parklike with strolling paths through the maples and a grassy picnic area. Yet even here the ubiquitous presence of industry is accentuated by a linear open space which bisects the site focusing the view simultaneously on the river and the refinery. This allee is lined with sculptural forms that recall the smoke stacks from the Armour plant. Finally along the river's edge one bridges over an enlarged river inlet and becomes more intimately involved with the wooded shoreline and the more serene qualities of the environment.

ILLUSTRATIVES (50 & 51)
Cross section drawings contrast the western industrial hill and pond with the wooded river inlet area. The perspectives show the entry portal where a path must be chosen, the walk down the tree and sculpture lined allee, and the view which terminates with the refinery in the distance.

SOUNDS - Sharon Reichert

ANALYSIS (52)
The environmental factor that is the basis for this design is noise pollution. The freeway is responsible for the greatest portion of the pollution, because its linear form maintains a higher sound level for a greater distance from its source than other sound generators. Thus it is still deafening within the park itself. The other, remaining sounds of this environment, to be experienced need to be amplified or made more vivid.

MASTER PLAN (53)
The entry to the park is a long walk along the windy levee. Sound is created by the wind harps, increasing in magnitude as the visitor gets closer to the park. Upon arrival at the park, the impact of the freeway noise is intensified by a reflective wall. As the visitor moves toward the center of the park the contrast between the outside industrial noise and the solitude of the park setting is accentuated through creation of a large outdoor room encircled by 15' tallplant covered walls of stone and earth which buffer any outside noises. Thus sensitized, a person would move through the site crossing the wetland on a board walk where a reflective wall helps focus the sound of wind rippling marsh grasses. From here, the visitor ascends a bridge into the tree tops to experience the rustle of tree leaves and the twitter of birds. The path descends across a meadow where more wind harps play with the breezes off the river. Finally, the trail leads back along the river edge featuring its waves, clapping by ethereal sculptures caused by updraft and wind, and moving by the trickle of a creek.

ILLUSTRATIVES (54)
Portrayed are existing sounds, the wind harps, the inner circle of silence, the river edge clappers, and a panorama from the marsh walk and reflective wall to the bridge moving through the treetops.

LANDSCAPE ARCHITECTURE THESIS PROJECT

SOUTH ST. PAUL RIVERFRONT PARK - Steve Wensman

SITE ANALYSIS (55)
This project involves a park design for the former waste water treatment plant south of I-494. Influencing the design is the relationship of this site to South St. Paul's whole riverfront and public open space system, and to nearby uses such as the Armour site and the Newport industrial area. Investigated are the impact of I-494, access to the river and this park site, the levee and impondment areas.

DESIGN DIRECTIVES (56)
The primary focus of the park design is to create a new identity in South St. Paul that focuses on the river and aspects of the city's history. The park is intended as a trail head park and as a transition from the manmade landscapes of the city to the more natural areas to the south. The park is to acknowledge its surroundings yet become a place for retreat from them.

MASTER PLAN (57)
Access is provided for pedestrians (bikers, skiers, etc.), drivers, and boaters. The pedestrians arrive from the north along the levee or from the south along Mulden Avenue. One path follows the river's edge which interconnects to another one on top of the levee. As the levee turns inland a pedestrian bridge (recalling an Armour railroad structure) crosses a new inlet (or bay) from the river which would be created by dredging and expanding a now dry pond area. The dredge materials would be used to create a large viewing hill which celebrates the terminus of the levee in the Twin Cities. The northern part of the inlet serves as a more protected boat launch/docking area instead of siting them directly on the river, and it becomes the primary way inwhich boaters enter and leave the park. To the south the inlet has a naturally vegetated edge which is the transition to the existing wetland. To the north of the inlet is a large open green, sunken and grassy so that many activities can take place there buffered from the surrounding industry. A new parkway entrance for cars coming to the park is marked with the old Armour gates.

SKETCHES (58, 59, 60, & 61)
The first board of sketches show the experience of a motorist entering the park from the north. The second shows the pedestrian view including the levee-top bicycle and pedestrian paths separated by a low landscaped median. The third shows the Armour inspired bridge over the new inlet and a cross section through the viewing hill. The final illustrations continue the cross section and other drawings showing how the levee forms the north side of the bay and how pedestrian paths and concession areas fit into the park.

CONCLUSION

Taken together, all the students insights and ideas represent the wealth of opportunities this site presents for South St. Paul. As the students looked with increasing care at the site, their own notions began to be challenged about what is natural and what is not, what is permanent and what is ever evolving. They began to see the site not as a pristine environment that could or should be restored, nor a traditional park to be designed and maintained. Granted, this place is and should continue to be a home for riverine plants and creatures. But, at the same time, this setting particularly lends itself to be a creatively developed interactive place which will encourage people to learn about their environment and their own role in it.

Not one of the student proposals is likely to be implemented directly. But, the hope is that they will inspire and challenge the community to view its river resource in the broadest way. And that the community will work to create places that will invite people to experience in a new way the riverfront and its provocative diversity.